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Course Code and Name**: 2CS402 Operating Systems**

1. Round Robin

IntelliJ IDEA - Innovative [E:\College\Sem-4\OS\Innovative] - Main.java

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Innovative > src > Main > main

Main.java

```java
13
14     public static void main(S
15
16         Scanner in = new Sca
17
18         System.out.print("En
19         int n = in.nextInt()
20         System.out.print("En
21         int q = in.nextInt();
22
23         int[] at = new int[n]
24         TreeMap<Integer, Arra
25
26         System.out.println("E
27         for (int i = 0; i < n
28             System.out.println
29             System.out.print(
30             at[i] = in.nextIn
31             System.out.print(
32             bt[i] = in.nextIn
33
34             tm.putIfAbsent(at
35             tm.get(at[i]).add
36         }
37
38         int[] rem = Arrays.co
39         Queue<Integer> readyS
40         ArrayList<Integer> go
41
42         int t = 0, done = 0;
43         int prevT = 0, nextT
44         while(done < n){
45             for (int i = prev
```

Run: Main

```
            AT = 1
            BT = 4
P2
            AT = 2
            BT = 2
P3
            AT = 4
            BT = 5

|Process No. |    Arrival Time |    Burst Time |    Completion Time |   Turn Around Time |      Waiting Time |
|    (PId)   |            (AT) |          (BT) |               (CT) |              (TAT) |            (WT)   |

|         P0 |               0 |             3 |                  7 |                  7 |                4  |
|         P1 |               1 |             4 |                 11 |                 10 |                6  |
|         P2 |               2 |             2 |                  6 |                  4 |                2  |
|         P3 |               4 |             5 |                 14 |                 10 |                5  |


TAT average = 7.750
WT average = 4.250


**GANTT CHART**


-----------------------------------------------------
|  P0  |  P1  |  P2  |  P0  |  P3  |  P1  |  P3  |  P3  |
-----------------------------------------------------

0      2      4      6      7      9      11     13     14


**THANK YOU**

Process finished with exit code 0
```

TODO   Problems   Terminal   Build

All files are up-to-date (a minute ago)

2. Page Replacement Algorithm (LRU)

```
File  Edit  View  Navigate  Code  Analyze  Refactor  Build  Run  Tools  VCS  Window  Help        PageReplacement - Main.java

PageReplacement  src   Main   main                                                                              Main

 Main.java

28      System.out.print(ANSI_RED + "Enter frame       ⚠3 ⚠1         "C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains
29      int f = in.nextInt(), pf = 0;                                Community Edition 2020.2.3\lib\idea_rt.jar=61330:C:\Program Files\JetBrains\IntelliJ
30                                                                   Edition 2020.2.3\bin" -Dfile.encoding=UTF-8 -classpath
31      Deque<Integer> recent = new LinkedList<>();                  E:\College\Sem-4\OS\PageReplacement\out\production\PageReplacement Main
32      int lru = 0, p = 0;                                          Enter frame size: 3
33      int[][] display = new int[f][seq.length];
34      char[] fault = new char[seq.length];                         7 7 7 7 7 7 7 2 3 4 5
35      Arrays.fill(fault,  val: '-');
36                                                                   ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
37      for(int i: seq){
38                                                                   7 7 7 7 7 7 7 7 7 2 3
39          if(!recent.contains(i)){                                 0 0 0 0 0 0 0 2 2 3 4
40              pf++;                                                 0 0 0 0 0 0 0 0 3 4 5
41              fault[p] = '*';
42              if(recent.size() == f){                              ------------------------
43                  recent.remove(lru);                              * - - - - - - * * * *
44              }
45          }else{                                                   5 Page Faults
46              recent.remove(i);
47          }                                                        Process finished with exit code 0
48          recent.addLast(i);
49          lru = recent.getFirst();
50
51          Deque<Integer> temp = new LinkedList<>();
52          int s = recent.size();
53          for (int j = 0; j < s; j++) {
54              display[j][p] = recent.getFirst();
55              temp.addLast(display[j][p]);
56              recent.removeFirst();
57          }
58          s = temp.size();
59          for (int j = 0; j < s; j++) {
60              recent.addLast(temp.getFirst());
61              temp.removeFirst();

TODO   Problems   Terminal   Build
All files are up-to-date (moments ago)                                                                                    17:1
```

THE END

:)